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ABSTRACT

The Feuerstein Mediated Learning Experience and Cognitive Modifiability theories show promise for American Indian people who, despite much innovation, still search for learning theories which can provide native people with necessary tools for making efficient qualitative and quantitative adaptations to an ever-changing technological, cultural, linguistic, and political world while maintaining language, culture, and heritage throughout the changes. Based on mediated learning experiences and cognitive modifiability, these theories open possibilities for the use of "instrumental enrichment" and "learning potential assessment devise" materials to develop intrinsically-motivated youth who would begin to ask the "why" behind phenomena or history in order to become "educated" about native heritage and contemporary issues and problems which need confrontation and solutions. Indian education issues which can be addressed by these experiences/theories include sense of cultural loss and identity, educational philosophy, low academic performance, lack of goal-setting orientation, and low self-concept and motivation. By studying and learning new methods of cognitive instruction and by causing programs to become integrated with "content" oriented programs, schools with students from culturally different backgrounds can stimulate renewed interest in the process of learning on the part of students themselves who are the next bearers of native culture and history. (NEC)

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FEUERSTEIN COGNITIVE EDUCATION THEORY AND AMERICAN INDIAN EDUCATION

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Introduction. Several general starting points emerge in attempting to discuss American Indian education: Pre-Columbian times; the Coming of the European People; the Aftermath of European Contact and Conflict; or Contemporary American Indian Society, Issues, and Problems. Many writers choose to begin with the coming of the Europeans as the focal point to discuss American Indian history because great changes began to take place as a result of contact between the cultures of the American Indian and the European.

In 1492 a mistakened Christopher Columbus, an Italian explorer, financed by Spain, is generally credited with "discovering America" and labeling the indigenous people as "Indian" because he thought he had landed in India. News of the so-called "discovery" of the "Indians" and their strange societies and ways was greeted with profound interest in Europe. The "discovery" not only altered their concept of the world as a globe, but they also by learned that another completely unknown continent actually existed. Columbus' misinformation has since had profound impact on the understanding of the now-called "American Indian". Columbus' misnomer and the subsequent cultural misunderstanding and interpretation of the American Indian has been an extremely troublesome burden to the American Indian people and his neighbors--the European and other cultures. American Indian history has been plagued with conflict after conflict as various governments, including the relatively new United States government, have attempted to interact with the indigenous people.

This great historical misunderstanding today is a daily reality as educators and others attempt to define political legalities, cultural similarities and differences, and social and economic policy as it applies to the native people. The Native American people, themselves, have historically resisted assimilation and cultural anniliation attempts through warfare and diplomacy. Many Native American cultures still survive intact, but nevertheless face non-stop changes which threaten the cultures and propose further disintegration. The will to struggle for cultural integrity or to give up is a predominant issue and a daily reality.

The status of the American Indian in America has emerged as a unique one when compared to other American cultures or other American minority groups. The U. S. Constitution refers to "Indian tribes" three times--not because of racial, cultural or linguistic reasons--but because of international governmental relations. The issue of self-governmental rights and tribal sovereignty, land ownership, water rights, a treaty status with the U.S. Government, hunting and fishing rights, and special legal relationships to the United States all account for the uniqueness which other American groups do not encounter in their daily lives.

The whole existance of the American Indian in many ways is unique just by the fact that native people now exist inside the United States of America, which itself is an international power espousing democractic ideals, capitalistic economic wealth, and a technological society. The issues faced by contemporary native people whose cultural values and lifestyles differ

with typical American values are those to be faced by indigenous people elsewhere in other countries in future years. How Native Americans deal with present day problems may have valuable implications for those similarly situated in other parts of the world and, indeed, within the 400 or so diverse American tribal societies themselves.

Cultural and language preservation and enrichment are seen by native people as hinges upon which Native American survival and integrity exist. Legal, educational, economic, social and other ideals and developments are predicated upon appropriate and relevant cultural and linguistic adaptations and innovations. By far the response of native groups to multicultural existance in America has not been to "give up" (although the feeling persists in seemingly increasing rates), but rather the feeling has been to restore and enrich the cultures and make necessary adaptations to counteract a growing sense of cultural loss and emptiness.

American Indian leaders of the past viewed "education" as the key to survival. Many spiritual, political and military leaders placed educational emphasis above political, social and economic development in the hopes of using education as a vehicle for constructive change and for a harmonious existance along side the white people who had come to stay, never to leave. Perhaps it was the the Indian leaders' dream to see a cooperative blend of tribal and American ways manifesting themselves in tribal lands and territories, with Earth Mother and Father Sky ideals at the core of tribal views, while children spoke fluent English, possessing the means for American economic survival and fearing no American because of being "an Indian".

Many policy-makers and theoreticians (most non-Indian and a few Indian), on the other hand, viewed education mainly as a tool to convert the so-called "Indian" into an American white man who, by certain definitions, can be one who must exist *without* any semblence of American Indian cultural values, tribal history, or language. For example, for a white man to believe in Indian values of human societal relationships would counter white ideals of social organization. Such beliefs would pose a destruction of sorts of what is perceived as "the American way of life". Being American and being Indian were always diametrically opposed, in American thinking, and the "Indian ways" had to be sacrificed and replaced by an "educated" American in order to survive. The whole concept of being trapped in two worlds or being torn between two cultures accounted for a severe psychological dilemna which only the dissolution of one of cultures (the Indian ways) would solve and thereby properly usher the American Indian into contemporary American society. This was a baseline approach used by the U.S. Government in drafting 1950's era Indian legislation.

The question of native identity and definition is of great increasing importance today. Bridging a rich cultural heritage with the present and projecting future relationships are daily tasks the educator and student must undertake with efficient skills. Hopefully, the educator knows precisely *how* to do this in a systematic manner which realizes the great potential of the Indian person whose cultural outlook can be of great benefit to many people. Hopefully, the educator has an intrinsic desire and appreciation of American Indian culture and looks to learn new ways of incorporating the educational process into native ways so that the native person can maintain his language, culture, and heritage throughout the many changes--technological, cultural, linguistic, political, and others--that lie ahead.

The Feuerstein Mediated Learning Experience (MLE) and Cognitive Modifiability theories show much promise for American Indian people who, despite much innovation to now, still search for learning theories which can provide native people with necessary tools for making efficient qualitative and quantitative adapations to an ever-changing world.

A Brief Description of Feuerstein Theories. One basic premise includes the idea that the human being would learn to interact with the environment after receiving human-directed mediation from an adult who interposes himself between stimuli and the organism and who charges the stimuli with meanings and rationales. Through the teaching of values or meanings, a "curiosity" or propensity on the part of the individual to grasp or understand phenomoma, concepts or knowledge would result. This type of learning is contrasted with an outlook that proposes that a human being acquires knowledge only through direct exposure to stimuli in his/her environment. Hiawatha, in the novel, seems to gather his information by such direct exposure. He wanders through nature picking up his knowledge through direct interaction with nature--not necessarily through the process of cultural transmission.

The mediator, on the other hand, "transforms, reorders, organizes, groups, and frames the stimuli in the direction of some specifically intended goal and purpose." Good amounts of mediated learning experiences (MLE) would serve to stimulate the thought processes. MLE is defined by Feuerstein as a "quality of human-environment interaction. As such it also represents a unique feature of human interaction and is conceived as the determinant of autoplasticity of the human organism and plays "a major role in determining the evolutionary trend and the considerable changes that take place in the human mental functioning. One can suggest that MLE reflects a deeply ingrained need of the human to transmit himself transgenerationally as a way to insure his continuity beyond biological existance."

Consider the adult care giver who teaches basket-making to a youth: both the meaning and process of making the basket are taught or transmitted to the youth over a period of several days, thereby allowing the youth to directly experience the basket's construction and to understand its cultural meaning. At the onset of the process, relevant from irrelevant plants are discussed and the whole range of plants is limited or narrowed down to a few choices (causing discrimination between stimuli). During the process, the youth is allowed to personally experience the actual construction and to see the process of basket weaving unfold. At the end of the process, the youth can see a finished product coupled with its cultural meaning. Glancing back in time and reviewing the process, the youth would be able to summarize the experience and understand such cognitive processes as similarities (what is similar about the basket between its beginning and ending stages?) and its differences (what is different about the basket between its beginning and ending stages?). While the youth may not be able to recite its cognitive benefits, implicitly the experience would endow the youth with structural cognitive functioning.

The mediated learning experience for culturally-oriented youth would partially be derived from intentioned adults whose basic goal would be to teach the child to become a competent and functioning person within that culture. A logical source for mediation would include that adult's experience which would include major parts of his/her cultural heritage. Reaching into the past to mediate meanings and rationales for life would constitute an instructional MLE approach. The further the reach into the past, the greater the propensity of the mediator and the learner to define the present and the future. Temporal and spatial cognitive concepts, for example, would be constantly enriched or modified if that society, community or family did, in fact, search the past to define the present or future. This could find expression in communal dances, ceremonies or social policy. The people within that society would tend to be more selective and precise in gathering, elaborating and acting upon both new and old data, knowledge or information. Perhaps structured decisions regarding that society's needs (individual, familial, community or national) would be preferable at that point. Perhaps the individuals, leaders or managers of that society would see the necessity to "safeguard" values or to view heritage as

a necessary component in the development of economic, social, or political systems. Cultural values and philosophy would tend to "guide" the educational process.

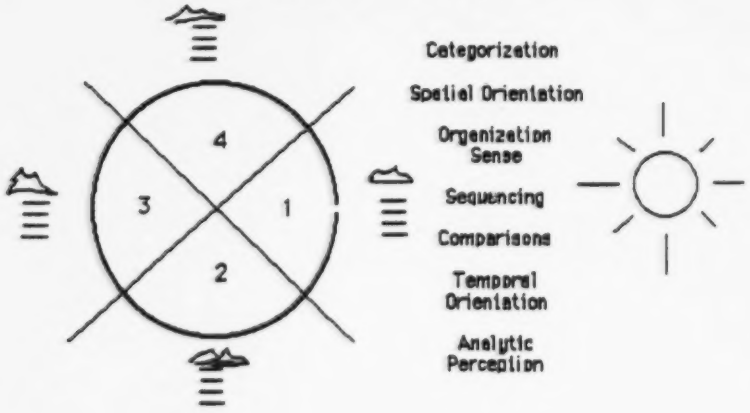
"Cogntive modifiability", terms utilized by Feuerstein, would mean in part that the individual within that society would have a tendency towards an open system of thought in which the individual would be more active in the generation of new data and information, based upon perceived data, knowledge, or information. The cognitive structure would be better able to process information, rendering the person more flexible and able to acquire the great amounts of information needed for his survival. Options in bi- or multicultural adaptation and/or being selective and sensitive towards new or novel ideas (which confront the base culture and society) would most likely increase along with the individual's perceptions, thereby increasing perceived choices for survival. Dispositions and the arrival at meaningful judgements and conclusions would tend to be based upon rationales connected at some point to values mediated through the cultural instructional process. Decisions regarding controversial issues of cultural adaptation or relevance would be recognized as such, perhaps by legislators, educators, or students who would, for example, resort to temporal and spatial orientations, connected with their cultural meanings, as guides to define problems and project solutions to those problems.

Reduced cognitive modifiability would include the idea that the individual would tend *not* to be very open or flexible in his/her perceptions. Dulled perceptions would tend to reduce the propensity of the individual to be actively engaged in mental operations (i.e. data gathering, data transformation, or data expression or taking action based upon perceived data) intended to exert a degree of control or self-determination over issues which confront that individual, family or society. If perceptions are connected to cultural heritage, then chances are good that reduced cognitive modifiability combined with a lack of mediated learning would reduce one's access to meaningful cultural identity and/or self-concept--two concepts now voiced as needs by most tribal groups. If the individual performs in daily life at reduced cognitive levels, then different cognitive deficits can negatively decrease the learning potential of that individual.

The point here is that sound cognitive instruction which is linked to one's cultural heritage proposes to increase the cognitive modifiability for students and proposes to enrich a student's cognitive structure. Part of the task of the teacher would be to find those links or bridges so that a relationship can be drawn to cognitive-culture relationships.

The relationship between cognition and culture. Culture and cognitive functions are interconnected. To use Native American culture as an example, one would find many relationships between culture and cognitive functions. The Navajo-oriented graphic below would help explain some of those relationships.

COGNITIVE-CULTURE RELATIONSHIP



As one can see from the above diagram, such cognitive functions (categorizations, spatial orientation, etc) are inherent in Native culture (a generalized Navajo symbol of cultural interrelationships is used above) in that the concept of "wholes-parts" or *analytic perception* would be embedded into the symbol by the actual numbering and naming of four (4) distinct parts of the Navajo way of life. Each part such as the Four Sacred Mountains and/or ceremonies (represented by the four lines beneath each mountain) have specific meanings relating, for example, to harmony or disharmony in Navajo life. The cognitive-cultural interplay is seen by splitting wholes into parts in order to separate or integrate various meanings within the culture.

A Navajo person, well-versed in the culture, would likewise be highly developed in *comparisons* (similarities-differences-judgements/conclusion) since that the person would have to *compare* in order to arrive at judgements or conclusions about such issues as appropriate or inappropriate behavior or which songs to sing to attain proper spiritual harmony and balance. Only by categorizing and breaking apart each section, knowing and understanding the spiritual dimensions of each section, and then understanding subtle similarities and differences can the elder arrive at judgements or conclusions and thereby enable himself and others to exist in balance with the Earth Mother and other phenomena. Both the analytical and comparative processes are invoked during a intracultural diagnosis of Navajo issues and problems.

The same person would also manifest qualitative *spatial orientation* since the Navajo culture pays high emphasis to directionality (the Sun being an important facet of cultural outlook and orientation) both in a concrete and abstract sense. Human motion and growth normally follows a clockwise direction because the circle and the sequence of its four interior parts are organized spatially with the Sun as a main referent point. It is "easier" to mediate "goals in life" to persons who have qualitative spatial orientational referents because of the stable referent points contained in that person's conceptual experience which should be rich with cultural knowledge and meanings. Sequencing of information or knowledge is a strict cognitive requirement for a person coming from a strong cultural background.

Temporal orientation (partially the relationship between time, space, and distance) cannot be omitted in discussing its relationship to the cultural development of a Navajo person. Navajo country is characterized by wide and open spaces, marked by hills and mesas, by gullies, by several rivers, by the Four Sacred Mountains, by dirt roads and highways, and rugged interior mountain country. For a Navajo person, perhaps a shepard, to travel, by horseback or vehicle, from one point to another would require the

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simultaneous use of time, space and distance in order to project a sense of temporal organization into his life. If the person chooses to organize himself by "Navajo time" which is intimately intertwined with the culture (the Sun being a principal element), then he would have to use Navajo labels for the various positions of the Sun as it travels through the sky to simultaneously use time, space, and distance factors to travel from one point to another. Shifting to an industrial sense of time requires more precision and accuracy in using the same temporal cognitive functions. One sense of time is predicated upon the other and the Navajo cultural sense of time should not have to be sacrificed in order to live in an industrial world.

This same person would also manifest an "organized" as opposed to "disorganized" sense of values, beliefs, or lifestyle because in attempting to live within Navajo culture all the cognitive operations inherent in that culture would have to come into direct contact with sources of stimuli contained in the Navajo environment. Arriving at judgements or opinions about the Navajo world is predicated upon well-used cognitive operations.

Making cultural adaptations to non-Navajo culture must necessarily include a cognitive structure. The drawing of relationships or the piecing together of many sources of information and stimuli is a mental act each Navajo must perform in order to recognize all the differences, similarities, spatial concepts, etc. inherent in a multicultural world. Adaptation is much easier , though much, much more time consuming, if a well-developed Navajo cultural-cognitive orientation of the individual is intact.

In times past the native people surely did follow input (data gathering), elaboration (data transformation), and output (acting upon information) phases of the mental act when they became involved in any decision-making process and attempted to solve various issues confronting the community or society. How the output information was used or acted upon depended heavily upon the values and meanings of the cultural group. Another way to explain the relationship between culture and cognition is to state that definate forms of spatial orientation, temporal relations, comparisons, or analytic perception (and other cognitive functions) are contained within the overall context and inner workings of the Native American way of life and in order to behaviorally manifest cultural knowledge and information, one must use structural cognitive functions to understand such knowledge.

A clear structure, perhaps taking form in artistic ways (i.e. sandpaintings, baskets, deerskin paintings), was needed by both the mediator and learner to understand in a reciprocal fashion the various facets of native cultural and religious organization. Acting upon information within a cultural structure was necessary for all members of native society in order to coordinate communal reactions to and confront the many changes that lie ahead of them. This is probably why so many Native American elders and leaders originally embraced the concept of education, brought by Europeans and Americans, as an important ingredient to native survival. Part of the 1970s disillusionment by native people with American-style education happened because the native process of mediation (mediated learning experiences) was ignored in favor of foreign and alien content information. It was a failure, in part, by educators to interculturally bridge cognitive and content concepts so that the child could more efficiently acquire and process badly needed information, transform that information, and act upon or use it for the benefit of the native community or family.

Consistently throughout the history of Native American education, the US Government and its education patrons viewed the culture and language of the Indian as a detriment to the Indian's future. The "man" inside the useless native culture and language was what needed to be salvaged. Parental involvement, an important concept in Indian education today, was not seen as necessary partly because parents were viewed as possessing the very culture and language which Indian children did not need in order to survive. Indeed, today, many Indian and non-Indian school board

members and teachers share to varying degrees this same sentiment.

In 1975, the U.S. Congress attempted to relieve this process through the Indian Self-Determination and Educational Assistance Act (PL 93-638) by allowing Indian community members to "contract" federal education functions away from the U.S. Government and into the control of the Indian community. In 1978 through the Title XI Indian Education Amendments (PL 95-561) the Congress reinforced Indian educational law by further mandating Indian control mechanisms in many areas of federal-Indian education, including school board training, increased parental involvement and authority over certain Indian education programs, administrative realignment of the Bureau of Indian Affairs to increase its effectiveness, and an increased federal government advocacy of Indian-controlled education. In 1984 Congress amended previous laws to require further strengthening of Indian education through support of locally-defined education and financial standards and other more technical issues.

These changes have come after a century of what some Indian educators have called "mis-education" and the quest for Indian-controlled schools has become a new goal for many communities. The latest efforts of the tribal governments have also stepped up emphasis on both education and economic development, on tribal sovereignty, and towards overall nation building.

Because the cultural orientation of the student is closely tied to his/her cognitive orientation, it would behoove educational institutions to develop, not destroy or let remain static, the students' cultural-cognitive development. This becomes very important in any area of academic performance as well. Other cognitive functions could also be discussed here, but to limitations on space here, only the above functions are discussed.

The Feuerstein theories open many possibilities for the use of Instrumental Enrichment (IE) and Learning Potential Assessment Devise (LPAD) materials not only for rendering an individual cognitively modifiable, but also for using the materials to combine "cognitive-cultural" activities and teaching strategies as a means to stimulate learning which should relate to the native student's particular cultural background and experience. The acquisition of cultural knowledge can be equated with content (product) instruction, while cognition can be equated with process orientation in thinking. The two concepts are interchangeable and interdependent.

The cognitive-cultural link will hopefully be added to the many different "to do" lists for teachers, admnistrators, board members, and students in order to define a means (process) to achieve goals (ends) set by the Native American people. Cognitive enrichment education for native youth would allow the youth to acquire the skills and thereby the means to achieve ends and would allow youth to look into the past to define the present and project solutions for the future. It would develop intrinsically-motivated youth who would begin to ask the "why" behind phenomena or history in order to become "educated" about native heritage and contemporary issues and problems which need confrontation and solutions. Native independence and self-reliance is partially predicated upon youth who can generate their own information and not passively rely upon others.

A Brief Outline of Contemporary Native American Education Issues.

Indian Education: New and Old. Native American education in the United States is both a new and old concept. New because it was only until recently that the US government, for example, began to relinquish control over Indian education. Most Indian-controlled educational institutions range

in age from one to eleven years old. A couple of schools (Rough Rock Demonstration School, Rough Rock, Az, Navajo Nation and Little Wound School, Kyle, SD) can claim to be Indian-controlled for some twenty years or so. Indian education is also new because many native communities still have not truly taken over such controls either from the federal (federally-operated) or state (public schools) governments, and as the years unfold, these communities have school systems which do not necessarily relate to nor meet Indian cultural and community developmental needs. Such schools tend to operate within the community without directly relating in curricular and instructional terms to the heritage and mediational values of the adults of the society. This happens partly because the school systems utilize ideas and curriculums that are basically against the implementation and incorporation of skills, knowledge, and attitudes of native cultures or because theoretical and methodological curriculums are not available. There are Indian communities or families who send their youth to public or other schools where they are totally "outnumbered" and any attempt to "insert" an "Indian curriculum" in such schools would seem to be impossible. There are Indian schools which have made this implementation and incorporation successful for their students and communities, but these schools are a small minority and for the most part do not see cognitive modifiability as a student educational need.

Native American education, meanwhile, is old because mediated learning experiences in native societies have been in operation for centuries. Mediated learning accounts for the general preservation of native culture and society despite the non-Indian's historically persistent attempts to de-Indianize and Americanize the native people. Mediated learning experiences seen through cultural contexts can provide educators and parents renewed support, validity, and advocacy for curriculums and programs designed to link the native past with the present so that the future of native peoples can be one of adaptations to assure the best cultural continuity.

Sense of Cultural Loss and Identity. There are many cases where an individual or community is experiencing a sense of cultural loss, a loss of identity and self-concept. Defined in MLE terms, the reasons for this situation lies partially in the break in the cultural transmission process. An adequate MLE requires an intentioned adult who, drawing from the meanings of his past, attempts to mediate phenomena or concepts to the child with an objective of "teaching" the child competence or mediating values belonging to that society. Without two essential concepts (content and process), the child will become less receptive to acquiring necessary information needed for his/her survival. Cognitive deficits would be more prone to happen. The child's modifiabilty level would also decrease.

There are many reasons an unintentioned adult would result. In Indian society today, one reason is that the adult has "given up" on native culture, does not adequately understand a replacement culture, and essentially refuses to mediate to the child. Perhaps a faulty comparison between the native culture and the dominant culture has taken place with conclusions drawn such that the native culture is no longer seen as viable. A disengaging of the cultural transmission process would result, leaving the child to "learn the new ways" on his own (not having any of his/her culture mediated) in order to one day return from school and use the new ways to help the ailing one.

An important situation could develop whereby the adults, the carriers of the culture, could actually view themselves as an end product of an archaic cultural existance and thereby existing without any real value to today's educational and other needs of the children. This could actually be told to parents by other parents, by political leaders, by educators, and others. The result is quite serious and parental involvement in such cases

needs to take on new strategies, meanings and techniques which recognize the MLE as an important ingredient for parental involvement in schools. Their children may develop a "low concept" of their parents, erroneously thinking them to be of no value to schools as well.

The IE program can be of great value in reaching the student (or community) in order to untap his or her capacity to "see" a cognitive structural process which can be applied to such tasks as cultural enrichment or community development. A student can apply IE concepts to his community, to his culture, to other experiences and in doing so bridge the past with the present to transform "old" information into new.

The community or individual who is not necessarily experiencing the sense of cultural, identity, or self-concept can benefit through the use of structural cognitive processes to further enhance learning and education for its members.

Mediated learning concepts can also provide for experiences which can enable the student to learn about new cultures or ideas and make decisions, based upon a well-defined process (a process that is contained in the native culture) in which the student can determine with a high degree of precision and organization relative to cultural adaptation (and not necessarly cultural assimilation). Such cognitive skills are increasingly needed by native societies and communities. These skills should be practiced by well-schooled native economists, educators, political leaders, social scientists, engineers, and the like. Schools and classrooms which fail to recognize, acknowledge, study and utilize the inherent process of the transmission of knowledge and meanings of life of the particular society they purport to serve run the risk of helping to cut off an extremely valuable learning process which has enabled the native societies--be they culturally strong or weak--to survive this far. Parents or adults, who are the primary educators and who for any number of reasons do not mediate native values and meanings to children, can also become part of the overall problem of disengaging the child's sense of heritage, thereby limiting the child's chances not only at cognitive modifiability, but also at cultural adaptation, self-reliance, and independent thinking.

Indian Educational Philosophy. In recent years, more and more Indian schools have been developing educational philosophies which call for youth who are simultaneously bilingual and bicultural and who are competent in English skills, in mathematics, in science, in social studies, and other areas. The philosophies indicate a desire for the incorporation of Indian values, culture and language into the school system. Many philosophies allude to community education, Indian pride, and sometimes specify which native values should be taught. Such philosophies indicate a growing awareness of native people to utilize the educational system as a tool for the preservation of culture and language, while academically preparing youth for life inside or outside the community and culture. Many philosophies call for a student who is prepared to exist in two worlds simultaneously, using values and skills from both worlds to enhance and enrich life in the native community.

Philosophies or curriculums which call for a dual existance or a multicultural awareness on the part of the student impose high cognitive requirements upon the student. The imposition is such that the student must not only acquire the content information of "other worlds or cultures", but must learn how to cognate or process information in a dual manner. For example, comparative behavior is predicated upon precise and accurate thinking, upon the drawing of relationships, upon defining criteria, upon becoming aware of qualitative and quantitative similarities or differences between objects, ideas, or events. The act of arriving at conclusions or judgements about cultures or events is predicated upon an efficient comparative (and other) cognitive function whether these are written or

orally spoken. The same cognitive requirements are inherent in the student learning two value systems (i.e. Anglo and a particular Indian group), understanding two or more histories, or knowing the differences and similarities between American Indian medicine and Western medical practices and sciences.

Furthermore, other cognitive requirements must be applied by the student to learn to coexist with their non-Indian neighbors and within their own communities. These include a sense of organization, a sense of working together, a sense of goal-setting, an understanding of evaluative processes, experience in setting alternative plans and being flexible at defining problems and expressing solutions to problems. Implicit in co-existance is everyone perceiving the same object, issue, problem and/or solution together. These should all be done *independently* by the students at some point in their high school career, preferably by the tenth or eleventh grade. Teachers should be able to provide relevant content information so that the students could take such information, transform it, and create new information which is relevant to his community, culture, or self.

Few researched and tested curriculums directly address these needs nor view these needs in terms of cognitive development. A key issue for educators is *how* to provide students classroom learning experiences so that they could eventually achieve the simultaneous existance (living in two cultures) with minimum disruption in their lives and without suffering the loss of native identity or of heritage.

Low Academic Performance. The general low academic performance scores and achievement level characterizes the educational problems of the Native American student despite the fact that such performance scores are for the most part discriminatory to the culturally different native student when issues of cultural and language bias (i.e. tests may be written in English, a "foreign" language to many native students, and test contents typically stem from non-Indian cultural values and icons) are considered.

If there is a "typical" problem area, it is in low English reading, math and science scores. Normally the educational framework of the cultural majority is designed to develop and integrate the individual into that society. By far the majority of curriculum used by educational institutions can not truly claim that the curricular goal is to integrate or develop the native student for native society. The native student must make his/her own adaptations if the school cannot or will not provide for such learning experiences. The process of adaptation is a cognitive one.

The IE/LPAD program, however, are a cognitive enrichment curriculum--not a content oriented curriculum. The IE/LPAD programs are aimed primarily at stimulating cognitive modifiability amongst other goals such as rendering an individual an independent, as opposed to a passive, learner, or making the student more intrinsically motivated. When an Indian student who comes from a culturally different background (different from the rest of the student body or the classroom materials), the imposition of academics on the student may require a internal translation from one language to another of the vocabulary, mental operations and concepts needed to master that particular activity. Inferred in this imposition are many cognitive concepts and operations which must manifest themselves in order for the task to be mastered in that foreign language and culture. Preferably the individual would be well versed and learned in the various cognitive functions manifested by his culture and society so that the process of bridging across two cultures is an "easier" task. Foremost amongst the cognitive operations to be used are that of comparisons, analytic perception, the projection of relationships, spatial orientation, categorization, syllogisms and labeling, framing, temporal relations.

The individual must be able to act as an independent learner because the

vast majority of American teachers will claim not to understand the native student's culture or language--two prerequisites needed (though not absolutely necessary) for adequate mediated learning. Other cognitive operations are important too, but the point here is that the imposition of academic learning is partially predicated upon structural cognitive modifiability. Understanding content information is predicated upon a well functioning cognitive structure.

An inadequate mediated learning experience in the child's past may very well be the reason for the student's seeming "inability" to function well in school. If the student is culturally deprived (deprived from meaningful access to his own culture) chances are that cognitive deficits such as unplanned and impulsive behavior, lack of verbal tools (in either language), or egocentrism are part of the learning problem of the student. Comparative cognitive functioning, for example, teaches us that one must clearly recognize one object (or culture) in order to execute a comparison towards another separate object (or culture). One needs two or more objects (or cultures) in order to compare. Knowing and understanding both objects (or cultures) increases with increased qualitative and quantitative measures of comparisons. Impaired comparative functioning yields vunerable ideas of cultural existance and therefore yields a vunerable self-concept as a native person.

Since content presentations in curricular materials and instruction are pieces of information to be learned, a variety of efficient cognitive actions, such as those explained above, would be needed by the native student to process that information from external sources (outside culture) for internal (native culture) uses, transformation, adaptation, or application.

The learning potential of the native student can be tapped, using the program, to the extent that his/her thinking capacity can also prepare him for an academic life which can push him beyond present levels of achievement *without* having to "sacrifice" his native cultural or language in the process. This can happen if the IE/LPAD materials are used in a bilingual and bicultural fashion, and, of course, with quality instruction from the transmittors of change--the IE/LPAD teachers. Many IE/LPAD students who, by educational diagnosis, "require remedial education" usually will find themselves at an advantage over the so-called "normal" student partially because they can think so well and therefore manifest more self-reliance and independence in their daily lives.

Lack of Goal-Setting Orientation. Ask most native students what kinds of goals they have set for themselves or their community and most likely the answers will be limited in scope. It is seen as a problem by all higher education Native American studies programs who inherit the Indian college freshman and sophomore students who, after arriving at college, still do not fully understand the intimate relationship of careers to their lives or culture. This happens despite the fact that the traditional society or culture they come from will typically have more-than-adequate cognitive concepts of spatial orientation, a base cognitive function associated with goal-setting. Students strong in MLE will have an "easier" time making a transition from home to school, although they will have a harder time because of the language differences.

Spatial orientation on the abstract level accounts for the base for many goal-setting operations so direly needed in career awareness and development classes. Planning and getting from one point to another, defining routes, developing alternative means to ends, understanding differing views of careers and their relationship to their heritage or their community are all topics to be developed with students using the IE/LPAD programs.

Low Self-Concept and Motivation. Being basically ashamed of being an "Indian" has continually plagued the educational process for many thousands of native youth. For example, it has been the experience of this writer that many times youths will confuse the so-called "low" economic status and lifestyle with the "Indian way of life". Two hours or so of comparison activities (i.e. defining attributes, similarities, differences, drawing of conclusions) would greatly clear up many such misconceptions. An individual who has not invested the necessary time and thought to clarify his "Indian identity" will likely be confused because the various parameters of his identity, which relate to customs, lifestyle, dress, mores, values, beliefs, or arts, are unclear. The problem would be compounded when a dominant culture with its views and attitudes heavily emphasized in the media enters the picture. It is not merely a solution to present "tribal" information (typically in a scattered, unorganized and supplementary form) and expect the student to formulate an identity. For those school systems accepting a responsibility to help students build positive self-images, it is incumbent that the cognitive process (i.e. analysis, synthesis) be taught by IE teachers so that students can learn how to construct the information. A well-defined cognitive-cultural process and program would afford Indian parents and local traditionalists good opportunity to help bridge the gap between parent involvement and classroom learning activities.

Indian Way: A Foregone Conclusion? Many people from native cultures (or people who work within the culture or community but grew up outside the culture) have come to view the Indian way of life as a foregone conclusion. These people, who may be Indian or non-Indian parents, teachers, administrators, school board members, or the students themselves, indicate that the native culture and language are primarily deficits or obstacles to learning. They reason that in order to excell or survive in today's contemporary and dominant society, one must emerse himself in the dominant society's ways because therein lies the hope of the future--not in an archaic and outdated Indian society. Technology applied to so-called "tribal" societies, they argue, is learned best by moving away from the heritage of the individual, away from the particular meanings of his culture. Technology is best understood from the singular, dominant American cultural viewpoint which must necessarily exclude native ways, they conclude.

An examination of their present day curriculums will typically reveal that less than 2% of the schooling time of the Native American youth is actually devoted to and incorporative of cross-cultural or native community-related instruction. If the native language is used, it is used to translate the dominant society's views of education, knowledge and values so that the student can "learn" by internalizing external (non-Indian) values and knowledge in a process that excludes learning by internalizing native values and knowledge.

There are others who sincerely believe that the native culture can and should co-exist with the dominant culture, but find a lack of curricular materials which can systematically address cultural or community issues without, for example, having to worry about offending parents or community members who view merging culture and instruction as religiously and/or morally wrong. It stands to reason that deemphasizing content (product) instruction and emphasizing cognitive (process) learning at least five hours per week (as the IE program provides for) through a highly objective curriculum can provide one means to incorporate a sense of native heritage into the school and classroom.

Key to the understanding of the teaching and learning process involved in addressing such native student needs is the understanding and appreciation of the concepts contained in the mediated learning experience

(MLE) and the structural cognitive modifiability components of Feuerstein theory.

Some General Problems/Issues Facing the Native American Community.

Tribal Government, Sovereignty, and Autonomy. Increasingly, tribal governments are beginning to assert themselves as governments and are attempting to pass tribal laws in such areas as taxation, environmental protection, zoning, tribal membership, fiscal appropriations, or election laws. Tribal governments argue in terms of a sovereign right to self-government and speak of a need for more autonomy when it comes to the U. S. government's relationship to Indian people. New relationships are being tied to state governments as well as tribal leaders continue to espouse education as a high priority in Indian affairs.

Indian Community Control of Education. Education itself has been a key point in defining long-range tribal economic, political and social goals. Tribal elders have long embraced the idea, but many did become dissatisfied with its contents mainly because people and agencies from without Indian country had been determining Indian education policies for almost a century for many groups.

Self-determination is a key word to describe today's efforts by native people to begin to take control over education. Control is defined in part as an all-Indian community-elected school board, control over fiscal matters, control over hirings (and firings), control over academics and instruction, student guidance, student activities, student transportation, parental involvement, and overhead and administrative decisions.

Tribal Economic Development. Within the past decade, native governments have undertaken an effort to revitalize the reservation economy through various privately or tribally operated enterprises. Most tribes, if not all, have economic development as one of the two top priorities for development. Key to this effort is the need to develop an appropriate economic development model that dovetails with native culture.

General Community Development. Housing, parks, recreation, local government activities and the like are all now seen as issues to content with. Again, key is how models of economic and social development can fit native cultures. Elders, whose cultural hindsight enables them to interpret reasons for social disintegration, fear that the rising alcohol and drug abuse problems may not be overcome unless some semblence of the traditional ways are adhered to.

The IE/LPAD program teaches managment and disposition. Well-taught IE students can become managers of their lives and can easily relate to community problems and issues, provided that their IE time is spent doing so. Issues can be taken and dissected and using the IE process solved. Planning and evaluating functions--to critically needed skills--are taught in IE. The teacher must bridge cognitive concepts to community issues and problems in order to make more real the problems and more importantly to enable the student to confidently define problems and express solutions--two skills which combat apathy and passiveness in learners.

Overview of Instrumental Enrichment /Learning Potential Assessment Device as Indian Educational Philosophy .

It is possible for educators involved in Indian education to draw from Feuerstein theory and methods to help develop an educational philosophy which may be designed to meet particular Indian student needs. The concept of structural cognitive modifiability cannot be bypassed. Indian

communities cry out for well-trained youth who can gather, transform and act upon a thousand pieces of information and make it work for the base society without alienating the cultural values of the elderly and the middle-aged people. These communities desire that new programs and institutions be able to relate to the culture and society in comfortable ways. This may sound repetitive, but many hundreds of native people today cannot relate to institutions such as health and social welfare, education, economic development, political development, police science, counseling, or psychology mainly because of past efforts to disenfranchise the Native American from his culture and language.

The concept of mediation or mediated learning experience has great application and validity for Indian groups. Mediation can be done in any language and is not the perogative of certain cultures. Traditions of the Indian people do not make one less modifiable. Instead, tradition-strong students probably have increased chances for adaptations needed for them to live in "two worlds", and chances are that these same students have developed a strong cognitive base for application to school work and life. How well prepared is the curriculum and instructional program to allow students to bridge (for themselves) the so-called gap between school and Indian culture?

A strong difference exists between cultures who "want to give up" and those who choose to exist by relying on their heritage. Feuerstein theory, for example, explains the difference as partly because of the whole concept of "mediation of meaning". Stimuli are charged with meanings that that particular culture possesses. Objects of the culture contain high symbolic meaning through which life is lived, problems are defined, solutions are developed, goals are achieved, and motivations and self-concepts are formed. It is what keeps that society moving beyond extrinsic gains and more towards intrinsic values of learning which are connected to particular meanings. Cultural objects separated from their meanings no longer contain a direct value to life which is seen as dear and important by that society. Likewise, transmission of values or competence cannot take on full meaning if stimuli presented to students is scattered, disorganized and devoid of tribal cultural meanings. The whole process of information systhesis is predicated on analytic perception (i.e. wholes-parts) which, in turn, helps develop a sense of constructiveness on the part of the youth. Indian educational philosophy has indicated the need for a cultural reconstruction so that youth can become more involved within the community--not detached from community or cultural development.

Indian educational philosophy can benefit as a result of great care taken to articulate student, staff, community and other needs which draw from MLE and structural cognitive modifiability theory. Ignoring these can only result in delaying a more efficient process to make native youth more adaptable, modifiable, or independent in thought and action. Indian self-reliance and sovereignty, itself, are linked to cognitive modifiability and the MLE.

Summary and Conclusion. Because of this apparent relationship between cognition and culture, instructional methods and materials can be developed to enhance a student's learning through well-defined and well-developed curriculums which relate to the individual's cultural heritage, community, or to his/her experiences. It is important to note that the various Indian people within a community where the educational institution is located should become involved in the process so that religious or other mores are not adversely addressed or ignored and so that proper bridging of concepts can be developed within the curriculum.

In examing the history of Native American education, we know that the concept of "Indian controlled schools" is relatively young--eleven years old for most tribal schools. Many native youth today still score well below the academic norms when compared to other non-Indian youth. Many native

youth still have negative self-concept and identity problems. Still, tribal leaders push for such ideals as sovereignty and self-sufficiency for Indian nations. Tribal education agencies have begun to address issues of bilingualism or biculturalism. Even the federal government has advocated for increased Indian involvement and self-determination over Indian education.

The non-Indian dominant society searches for ways to teach its youth to understand the whole concept of "change" in of itself. There are many, many choices and decisions which confront the contemporary youth as compared to youth of fifty years ago who lived in a less complex world of choices and decisions. Indian youth are in a very similar situation and for many the question of bicultural or bilingual existance only compounds or makes more complex their situation.

Increased student cognitive efficiency and knowledge of native cultural information can prove to be very beneficial for contemporary native cultural survival and development. The tribal elder who sat down and mediated both the meaning behind an object and the process of its development allowed both culture and cognition to flourish in the minds of its youth, making them more susceptable to change and to learning.

Indian educators and parents who divorced themselves from this role will (or have) most likely cut the important link between cultural learning and cognitive processes. Many parents and teachers have agreed that to leave the cultural heritage out of the classroom is in the best interest of the children, after all, they argue, Indian culture (and language) is archaic and not relevant enough to use in today's technologically-oriented classrooms. It is almost as if culture and cognitive processes are thought to be separate--culture belonging to "pow wows", "Indian speakers", "Indian clubs" and cognition belonging more to non-Indian modes of academic thought. If allowed to drift further apart, what is known as "Indian culture" will be relegated to external or supplementary school programs if culture is not considered a dead issue before then.

By studying and learning new methods of cognitive instruction and by causing such programs to become thoroughly integrated with its "content" oriented programs, schools which have students who come from culturally different backgrounds can actively take part in stimulating renewed interest in the process of learning on the part of the students themselves who are the next bearers of native culture and history. By singing our own songs, we can increase our chances for better and more comfortable lives for our youth and ourselves in the present and future society.

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